

To whom it may concern,

- 1) BPT has the potential of creating significant image artifact to diagnostic ultrasound imaging in Doctors Offices, Residential Medical Clinics or in Hospitals.
- 2) PLT compatibility with our Ultrasound Products has not be tested nor evaluated, however it needs to be.
- 3) Sales of GE Medical Electronics products in Europe requires compliance to a RF Conducted Susceptibility Standard called IEC 61000-4-6. The test consists of RF energy being coupled unto the AC line cord (and other cables) and the frequency is swept from 300 KHz to 80 MHz. This is a severe test for Ultrasound imaging. First, the imaging band pass is from 1 MHz to 15 MHz. Secondly, for the Ultrasound probe's to pass sound waveforms - a certain porosity must exist; this requires a tradeoff in RF shielding across the face of the probe.

I think PLC could effect our diagnostic ultrasound business in a significant way. Let me quickly explain. We make diagnostic imaging ultrasound scanner machines for the radiology and obstetrics medical business, Non-evasive Ultrasound a big deal these days because the 2D or 3D imaging is real-time and that no surgery is required.

GE Medical's L9 Ultrasound scanner is a 128 channel RF receiver that is easily capable of sub-microvolt RF detection from 1 MHz to 15 MHz. With the low noise front end, the 12 bit A/D and the DSP processing our machine can easily pickup -150 dBm signals... Now here's where the rub comes in. For the crystal transducer probe to receiver the very weak Ultrasound echo's (back from the human body) there has to be little to none RF shielding across the face of the probe. When the probe is coupled to a patient that person effectively becomes an antenna for the Ultrasound machine. If any local RF fields nearby appear (within the receive band pass of the Ultrasound machine) nothing significantly stops this "common mode noise" and much "image or sound artifact" is seen or heard by the Doctor or the Sonographer.

If your are curious about the Ultrasound imaging technology Analog Devices has written a couple of papers about it and how GE Medical uses this technology.

<http://www.analog.com/library/analogDialogue/archives/36-03/ultrasound/UltrasoundFrontend.pdf>

Sincerely,

Dave Garnier
Senior Electronics Technician
PET Engineering.

Telephone: 262.312.7246

Visit Us On The Internet: <http://www.gemedicalsystems.com>